

Application No. 10/806,705
Amendment Dated April 3, 2006
Reply to Office Action Dated November 1, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

17. (currently amended) An optical cross-connect equipment for connecting transmission paths for optical signals, comprising:

a plural number of first transmission apparatuses, being provided corresponding to a plural number of first optical signal transmission paths, one by one, for receiving optical signals from said first optical signal transmission paths corresponding thereto;

a plural number of second transmission apparatuses, being provided corresponding to a plural number of second optical signal transmission paths, one by one, for transmitting optical signals to said second optical signal transmission paths corresponding thereto; and

an optical circuit being able to transmit the optical signals output from said first transmission apparatuses to an arbitrary one of said second transmission apparatuses, wherein each of said first transmission apparatuses, comprises:

a first wavelength demultiplexer for dividing the optical signal received from said first optical signal transmission path into an optical signal of a first wavelength and other optical signals having wavelengths other than that, thereby providing the optical signals of the wavelengths other than said first wavelength as an output to said optical circuit; and

a receiver for converting said optical signal of said first wavelength, which is separated

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from within said first wavelength demultiplexer, into an electric signal;

a controller for receiving and processing the electric signals converted within said receivers, thereby outputting said processed electric signals ~~said light source, wherein;~~

~~said light source converts the electric signals output from said controller into the optical signal of said first wavelength and~~ wherein each of said second transmission apparatuses, comprises:

a first light source for outputting an optical signal of said first wavelength; [[and]]

a first wavelength multiplexer for multiplexing the optical signals having the wavelengths other than said first wavelength, which are output from said optical circuit, and the optical signal of said first wavelength, which is transmitted from said first light source;

a first optical amplifier for amplifying and outputting the optical signal from said optical circuit to said first wavelength multiplexer, and

an optical separation means for receiving the optical signal from said first light source, thereby outputting a part of said light signal received to said optical amplifier while outputting reaming thereof to said first wavelength multiplexer,

wherein said first light source, receiving the electric signal output from said controller, converts the electric signal received into the optical signal of said first wavelength to be outputted therefrom.

18. (cancelled)

19. (currently amended) The optical cross-connect equipment, as described in the claim ~~[[18]]~~ 17, wherein said first wavelength has a wavelength band of 1.3 μm or 1.5 μm or wavelength of 1.48 μm

20. (previously presented) The optical cross-connect equipment, as described in the claim 19, further comprising:

a second wavelength demultiplexer positioned between said first transmission apparatus and said optical circuit; and

a second multiplexer positioned between said optical circuit and said second transmission apparatus, wherein the optical signals having the wavelengths other than said first wavelength, which are output from said first transmission apparatuses, make up a first wavelength multiplexed signal, with a plural number of optical signals, each having a different wavelength thereof, and said second wavelength demultiplexer divides said first wavelength multiplexed optical signal into a plural number thereof, each being different in the wavelength thereof, thereby outputting them to said optical circuit, and

said second wavelength multiplexer multiplexes the plural number of the optical signals, each having the different wavelength thereof, which are output from said optical circuit, thereby providing a second wavelength multiplexed optical signal, thereby outputting said second wavelength multiplexed optical signal to said second transmission apparatus.

21. (previously presented) The optical cross-connect equipment, as described in the

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claim 20, further having at least one regenerator between said second wavelength demultiplexer and said optical circuit.

22. (previously presented) The optical cross-connect equipment, as described in the claim 20, further having at least one optical amplifier between said optical circuit and said second wavelength multiplexer.

23. (previously presented) The optical cross-connect equipment as described in the claim 20, further having at least one regenerator between said optical circuit and said second wavelength multiplexer.

24. (previously presented) The optical cross-connect equipment as described in the claim 20, further having at least one regenerator between said second wavelength demultiplexer and said optical circuit, and at least one regenerator between said optical circuit and said second wavelength multiplexer.

25. (new) The optical cross connect equipment as described in claim 17, wherein said second transmission apparatus further comprises:

a second wavelength multiplexer for multiplexing one of the optical signals from said optical separation means with the optical signal output from said optical amplifier in a reverse direction thereto, thereby outputting it to said optical amplifier.

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26. (New) The optical cross-connect equipment, as described in the claim 17, wherein an intensity of the optical signal, which said optical separation means outputs to said first wavelength multiplexer is as large as ten (10) times of that of the light signal, which said optical separation means outputs to said optical amplifier, or more.

27. (New) The optical cross-connect equipment, as described in the claim 17, wherein said second transmission apparatus further comprises:

a second optical amplifier, being positioned between said first wavelength demultiplexer and said optical circuit, for amplifying and outputting the optical signal from said first wavelength demultiplexer to said optical circuit;

a second light source for outputting and exciting light for said optical amplifier; and

a second wavelength multiplexer for multiplexing the exciting light from said second light source and the optical signals of the wavelengths other than said first wavelength from said first wavelength demultiplexer.